

***Isoperla zwicki* sp. n. (Plecoptera, Perlodidae), a new Italian stonefly species**

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***Isoperla zwicki* sp. n. (Plecoptera, Perlodidae), a new Italian stonefly species.** - A new species of Perlodidae (Insecta, Plecoptera) is described from Northern Italy: *Isoperla zwicki* sp. n. Together with the description of the main taxonomical characters, remarks on its systematic affinities are given. On the basis of the structure of the male peneal armature this species can be assigned to the *sudetica* species-group.

Key-words: Stoneflies - Plecoptera - Perlodidae - *Isoperla zwicki* - Italy.

INTRODUCTION

Isoperla is a stonefly genus composed by more than one hundred species, with a Holarctic distribution (Zwick, 1973); 14 of these have been cited for Italy (Fochetti *et al.*, 1998).

From material collected by a colleague (Vanin, Univ. of Pavia) in Northern Italy we describe a new species belonging this genus, whose distribution seems to be very limited, considered that knowledge about stonefly-fauna of this area was considered good.

The main character for the identification of *Isoperla* species is the shape of the male peneal armature and the spines that compose it. Other characters, such as the head colour, the shape of the male's lobe of the 8th sternite and the shape of the female subgenital plate can be sometimes useful as accessory instruments for the species discrimination.

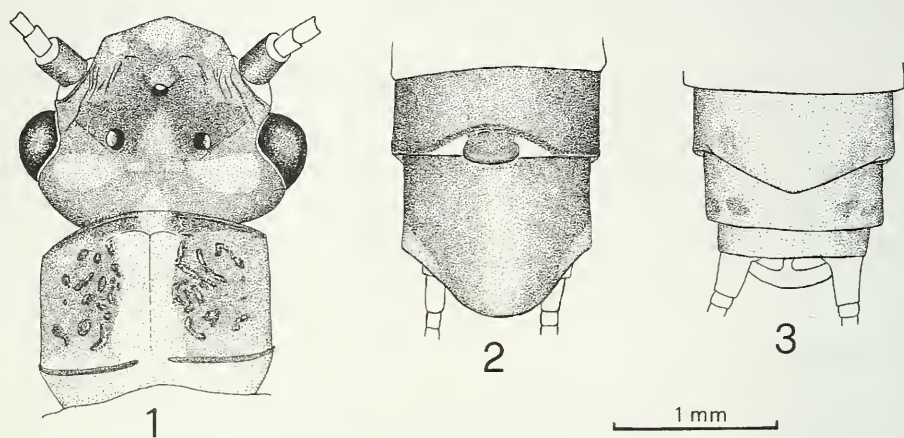
DESCRIPTION

***Isoperla zwicki* sp. n.**

Figs 1-5

Material: Italy, Trentino-Alto Adige, Val Gsies (Bolzano), Santa Maddalena m 1800, leg. Vanin, 15-VIII-1998: 1 male (holotype); 13-VIII-1999: 1 male, 1 female (paratypes). Other material: Italy, Trentino-Alto Adige, brook Pull, Sesto (Bolzano), 8-VIII-1985, 21 males, 2 females. The holotype and the male paratype are deposited to the Museo di Zoologia del Dipartimento di Biologia Animale e dell'Uomo della Università di Roma "La Sapienza". A female paratype is deposited to the Muséum d'histoire naturelle, Geneva.

Diagnosis: Middle size *Isoperla*. Head with brown colour, darker in the anterior part forming a characteristic pattern (Fig. 1). Four pale areas on the head: a triangular one between the posterior ocellles, a small triangular one on the occipital part of the head and two drop shaped behind the composed eyes (Fig. 1). Pronote rectangular, darker in both lateral sides and lighter in the middle (Fig. 1). Mesonote and metanote dark. Legs brown and abdomen dark (darker in the male than in the female). Both sexes macropterous.



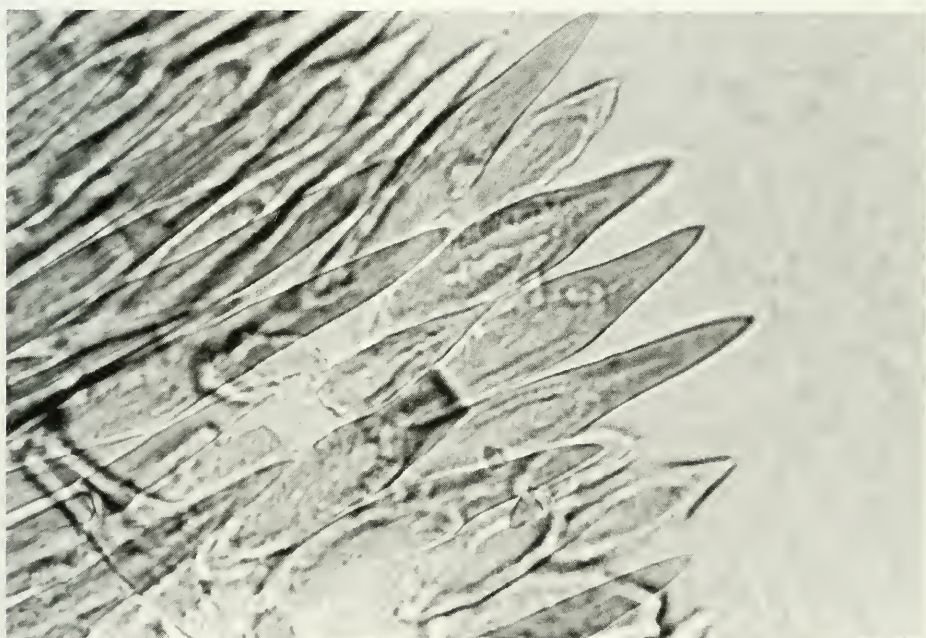
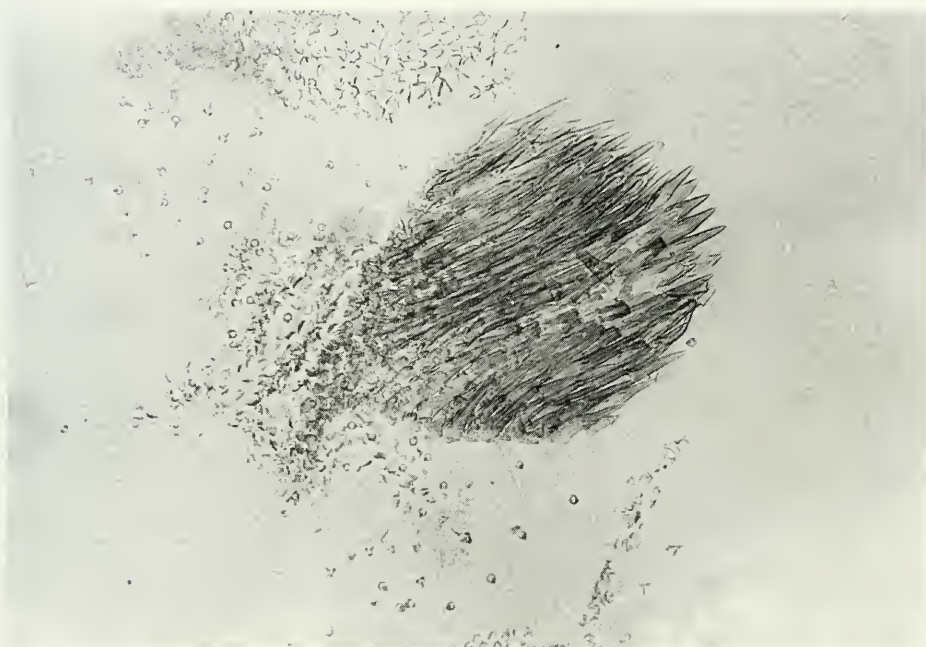
FIGS 1-3

Isoperla zwicki sp. n. 1: Head. 2: Ventral view of the tip of the male abdomen. 3: Ventral view of the tip of the female abdomen.

Male holotype (Figs 2, 4, 5): Forewing: 10 mm. Total length: 9.5 mm. Macropterous. Lobe of the tip of the 8th sternite dark, short and wide (length/width rate approximately 1/2). The peneal armature is plane and with truncate leaf shape (length: 130 μ m; width: 100 μ m) and without accessory armatures. The armature spines are elongated (length: up to 36 μ m; width: up to 5 μ m) and spear-shaped.

Female (Fig. 3): Forewing: 10 mm. Total length: 8.5 mm. Macropterous. Subgenital plate slightly triangular and wide.

Affinities: According to Consiglio's *Isoperla* species-group classification (1967), this species belongs to the *sudetica*-group, which is characterized by plane peneal armature and long pointed spines with non parallel margin. The peneal armature within this group is approximately as long as wide. *I. zwicki* clearly differs from the closest European *Isoperla* species belonging to this group, *I. sudetica* (Kolenati, 1859) and *I. silesica* Illies, 1951 on the basis of the descriptions given in the literature (Illies, 1951, 1952). It can be easily distinguished from *I. sudetica* by the lack of accessory armatures, by the peneal armature shape (more rounded and with a median emargination in *I. sudetica*), by the smaller size of the armature and of the armature spines in the new species. Also, armature size and length of the armature spines are



FIGS 4-5

Isoperla zwicki sp. n. 4: Peneal armature (x 500). 5: Spines of the peneal armature (x 2500).

smaller in *I. zwicki* than in *I. silesica*, which displays a more squared peneal armature (see Illies, 1951, 1952). Besides, the lobe of the tip of the 8th sternite is shorter and wider in *I. zwicki* than *I. sudetica*. This character is not drawn in *I. silesica*. The head pattern is similar to that of *I. goertzi* Illies, 1951. The female subgenital plate is very similar to that of *I. sudetica*.

Etymology: This species is named after our friend and colleague P. Zwick, to whom we are deeply indebted.

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